

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): A material comprising a substantially plane slab of a metal having on one surface one or more indents of a depth approximately 5 to 20 times a roughness of said surface and a width approximately 5 to 15 times said depth.

Claim 2 (original): The material of claim 1 in which walls of said indents are substantially perpendicular to one another.

Claim 3 (original): The material of claim 1 in which edges of said indents are substantially sharp.

Claim 4 (original): The material of claim 1 in which the Fermi energy level of electrons is increased compared to a material comprising a substantially plane slab of the same metal not having on one surface one or more indents.

Claim 5 (original): The material of claims 1 to 4 wherein said metal comprises an oxidation-resistant metal.

Claim 6 (original): The material of claims 1 to 4 wherein said metal is substantially homogenous.

Claim 7 (original): The material of claims 1 to 4 wherein said metal is selected from the group consisting of: lead, tin and gold.

Claim 8 (original): The material of claims 1 to 4 wherein said metal is substantially free of granular irregularities.

Claim 9 (original): The material of claims 1 to 4 wherein said metal is a monocrystal.

Claim 10 (original): The material of claims 1 to 4 wherein said depth $\geq l/2$, wherein l is the de Broglie wavelength.

Claim 11 (original): The material of claims 1 to 4 wherein said depth is greater than the surface roughness of the metal surface.

Claim 12 (original): The material of claims 1 to 4 wherein said width $\gg \lambda$, wherein λ is the de Broglie wavelength.

Claim 13 (original): The material of claims 1 to 4 wherein a thickness of said slab is a multiple of said depth.

Claim 14 (original): The material of claims 1 to 4 wherein a thickness of said slab is not a multiple of said depth.

Claim 15 (original): The material of claims 1 to 4 wherein a thickness of said slab is between 5 and 15 times said depth.

Claim 16 (original): The material of claims 1 to 4 wherein a thickness of said slab is in the range 15 to 75nm.

Claim 17 (original): A method of creating on one surface of a substantially plane slab one or more indents of a depth approximately 5 to 20 times a surface roughness of said surface and a width approximately 5 to 15 times said depth, comprising:

- (a) depositing a layer of material on said surface;
- (b) ablating a portion of said layer by means of electromagnetic radiation to expose portions of said surface;
- (c) creating one or more indents at a substantially 90 degree angle to said surface by etching said exposed portions to a uniform depth;
- (d) removing remaining portions of said layer.

Claim 18 (original): The method of claim 17 wherein said step of ablating a portion of said layer by means of electromagnetic radiation to expose portions of said surface does not damage said surface.

Claim 19 (original): The method of claim 17 wherein said step of ablating a portion of said layer by means of electromagnetic radiation is done with an e-beam.

Claim 20 (original): The method of claim 17 wherein said step of ablating a portion of said layer by means of electromagnetic radiation is done with an ion beam.

Claim 21 (original): The method of claim 17 wherein said material comprises a metal.

Claim 22 (original): The method of claim 21 wherein said metal comprises an oxidation-resistant metal.

Claim 23 (original): The method of claim 21 wherein said metal is substantially homogenous.

Claim 24 (original): The method of claim 21 wherein said metal is selected from the group consisting of: lead, tin and gold.

Claim 25 (original): The method of claim 21 wherein said metal is substantially free of granular irregularities.

Claim 26 (original): The method of claim 21 wherein said metal is a monocrystal.

Claims 27 (withdrawn): A method of fabricating an electrode pair precursor comprising the steps:

- (a) providing a silicon wafer;
- (b) creating on one surface of said wafer one or more indents of a depth approximately 5 to 20 times a roughness of said surface and a width approximately 5 to 15 times said depth;
- (c) depositing a first layer forming a substantially plane slab on said silicon wafer;
- (d) depositing a second layer on said first layer;
- (e) forming a third layer on said second layer.

Claim 28 (withdrawn): A method of fabricating an electrode pair precursor comprising the steps:

- (a) providing a silicon wafer;
- (b) depositing a first layer on said silicon wafer;
- (c) depositing a second layer forming a substantially plane slab of a material on said first layer;

(d) creating on one surface of said second layer one or more indents of a depth approximately 5 to 20 times a roughness of said surface and a width approximately 5 to 15 times said depth;

(e) forming a third layer on said second layer.

Claim 29 (withdrawn): The method of claim 27 or 28 wherein said first layer comprises titanium.

Claim 30 (withdrawn): The method of claim 27 or 28 wherein said second layer comprises silver.

Claim 31 (withdrawn): The method of claim 27 or 28 wherein said third layer comprises copper.

Claim 32 (withdrawn): The method of claim 27 or 28 wherein the method for forming said third layer of copper comprises electrolytic growth of copper.

Claim 33 (withdrawn): The method of claim 17, 27 or 28 wherein said step of creating one or more indents is done by etching to a depth $\geq l/2$, wherein l is the de Broglie wavelength.

Claim 34 (withdrawn): The method of claim 17, 27 or 28 wherein said step of creating one or more indents is done by etching to a depth that is a multiple of said thickness.

Claim 35 (withdrawn): The method of claim 17, 27 or 28 wherein said step of creating one or more indents is done by etching to a depth that is not a multiple of said thickness.

Claim 36 (withdrawn): The method of claim 17, 27 or 28 wherein said step of creating one or more indents is done by etching to a depth that is between a fifth and a fifteenth of said thickness.

Claim 37 (withdrawn): The method of claim 17, 27 or 28 wherein said step of creating one or more indents is done by etching to a depth that is in the range 15 to 75nm.

Claim 38 (withdrawn): The method of claim 17, 27 or 28 wherein said step of etching at a substantially 90 degree angle to said surface said exposed portions to a uniform depth is done by reacting a chemical etchant with the exposed surface.

Claim 39 (withdrawn): The method of claim 17, 27 or 28 wherein said step of etching at a substantially 90 degree angle to said surface said exposed portions to a uniform depth is done by reacting a plasma etchant with the exposed surface.

Claim 40 (withdrawn): The method of claim 17, wherein said material is an insulator, additionally comprising the step of:

(a) depositing a thin layer of metal on said indented surface.

Claim 41 (withdrawn): An electrode pair precursor comprising:

- (a) a silicon wafer having on one surface one or more indents of a depth approximately 5 to 20 times a roughness of said surface and a width approximately 5 to 15 times said depth;
- (b) a first layer of a substantially plane slab deposited on said silicon wafer;
- (c) a second layer deposited on said first layer;
- (d) a third layer deposited on said second layer.

Claim 42 (withdrawn): An electrode pair precursor comprising:

- (a) a silicon wafer;
- (b) a first layer deposited on said silicon wafer;
- (c) a second layer forming a substantially plane slab of a material deposited on said first layer, and having on one surface one or more indents of a depth approximately 5 to 20 times a roughness of said surface and a width approximately 5 to 15 times said depth;
- (d) a third layer deposited on said second layer.

Claim 43 (withdrawn): The electrode pair precursor of claim 41 or 42 wherein said first layer comprises titanium.

Claim 44 (withdrawn): The electrode pair precursor of claim 41 or 42 wherein said second layer comprises silver.

Claim 45 (withdrawn): The electrode pair precursor of claim 41 or 42 wherein said third layer comprises copper.

Claim 46 (withdrawn): The electrode pair precursor of claim 41 or 42 wherein the method for forming said third layer of copper comprises electrolytic growth of copper.

Claim 47 (withdrawn): The electrode pair precursor of claim 41 or 42 wherein said depth $\geq l/2$, wherein l is the de Broglie wavelength.

Claim 48 (withdrawn): The electrode pair precursor of claim 41 or 42 wherein said depth is greater than the surface roughness of the metal surface.

Claim 49 (withdrawn): The electrode pair precursor of claim 41 or 42 wherein said width $\gg l$, wherein l is the de Broglie wavelength.

Claim 50 (withdrawn): The electrode pair precursor of claim 41 or 42 wherein a thickness of said slab is a multiple of said depth.

Claim 51 (withdrawn): The electrode pair precursor of claim 41 or 42 wherein a thickness of said slab is not a multiple of said depth.

Claim 52 (withdrawn): The electrode pair precursor of claim 41 or 42 wherein a thickness of said slab is between 5 and 15 times said depth.

Claim 53 (withdrawn): The electrode pair precursor of claim 41 or 42 wherein a thickness of said slab is in the range 15 to 75nm.